

## **REMARKS**

Claims 1-57 are pending.

Claims 1-57 stand rejected.

Claims 1, 10, 13, 16-19, 21, 30, 32-35, 37-39, 52, and 54-57 have been amended.

Claim 58 has been added.

### **Claim Objections**

On page 2 of the December 17, 2003 Office Action, the Examiner stated that the “numbering of claims is not in accordance with 37 C.F.R. § 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution.” Specifically, the Examiner indicated that “Claims 1-20, 23-24 can not depend on the greater claim 52, claims 21-22, 25-37 can not depend on the greater claim 54, and claims 38-51 can not depend on the greater claim 56.”

Applicants respectfully disagree with the objection and submit that the claims are numbered properly. The claims are all numbered consecutively in accordance with 37 C.F.R. § 1.126. 37 C.F.R. § 1.126 does not prohibit earlier numbered claims from depending upon later numbered claims as long as all claims are numbered consecutively. MPEP § 608.01(n) “Example B” provides a specific example of acceptable claim numbering where claim 2 depends from claim 5. In accordance with MPEP § 608.01(n) and 37 C.F.R. § 1.126, for issuance the claims should be renumbered by the examiner with each independent claim preceding dependent claims dependent upon the independent claim.

Applicants respectfully request withdrawal of the objection.

### **Claim Rejections - 35 U.S.C. § 102**

Claims 52, 54 and 56 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,012,067 issued to Sarkar (referred to herein as “*Sarkar*”). Applicants respectfully traverse the rejection.

*Sarkar* teaches that “there is a clear need in the art for efficient relational database management systems to a) support distributed object paradigm for business application logic and b) support heterogeneous data over the internet. There are further needs for universal framework for internet transactions, security, various access techniques and object support in SQL for manipulating legacy databases.” *Sarkar*, col. 4, ln. 66 through col. 5, ln. 2. *Sarkar* addresses this need by using “Uniform Resource Locators ... to locate remote relational schema or other object definitions. ... This invention extends [the] prior arts by using Uniform Resource Locators (URLs) in relational databases to reference any kind of local or remote objects including other relational databases anywhere on the web. *Id.*, col. 5, lns. 18-20 and lns. 26-30. More specifically, “In another embodiment, URLs are stored in table columns of relational databases as locators of web objects and component relational schema with Java classes distributed over the net.” *Id.*, col. 5, lns. 35-38. (See also, “This invention uses the notion of URL to point to a database schema on the internet and a table (which may also be a virtual table or a view) belonging to that schema. *Id.*, col. 8, lns. 54-56.).

Figure 4 of *Sarkar* provides an exemplary depiction of two databases having respective Schemas 1 and 2. In Table R’, “Attribute Q in table R’ acts as the URL for the primary key attribute C of table S(C, E) in schema 2.” *Sarkar*, col. 9, lns. 56-57. Thus, *Sarkar* expands the usefulness of relational database theory.

Thus, rather than teaching a “method allowing application programs to access a database using intermediary code that provides information associated with a schema of the database to the application programs” of present invention claim 52, *Sarkar* simply teaches that “Uniform Resource Locators (URLs) are used by the present invention to locate objects corresponding to component relational databases on the web and other web objects, and URLs locating relational schema components and other web objects are stored as attribute values in tables.” *Sarkar*, Abstract. In further contrast to *Sarkar*, the method of claim 52 further includes “receiving a request to the intermediary code from one of the application programs to access the database and providing to the requesting application data that includes the information associated with a schema of the database, wherein the information includes classifiers corresponding to columns and tables in the database.” (emphasis added).

Furthermore, “interrogating a schema object to obtain location information for classifiers in the database that are associated with the one or more requests, providing the location information of the classifiers to the requesting application, and associating data search constraints from the one or more requests of the requesting application with locations in the database”, as recited by claim 52, is also neither taught nor suggested by *Sarkar*’s limited teaching of using URLs “to locate objects corresponding to component relational databases on the web and other web objects.” *Sarkar*, Abstract. (emphasis added).

Similarly, *Sarkar* neither teaches nor suggests the invention of claim 54, which recites in part “a memory storing storing program instructions that allow application programs to access the database through a database classification engine that provides information associated with a schema of the database to the application programs, the program instructions being executable to:

- receive a request to the database classification engine from one of the application programs to access the database;

- provide to the requesting application data that includes the information associated with a schema of the database, wherein the information includes classifiers corresponding to columns and tables in the database;

- receive one or more requests from the requesting application relating to transferring data between the requesting application and the database;

- interrogate a schema object to obtain location information for classifiers in the database that are associated with the one or more requests;

- provide the location information of the classifiers to the requesting application;

- associate data search constraints from the one or more requests of the requesting application with locations in the database. (emphasis added).

Similarly, *Sarkar* neither teaches nor suggests the invention of claim 56, which recites in part “a computer readable storage medium storing program instructions for allowing application programs to access a database through a database classification engine that provides information associated with a schema of the database to the application programs, the program instructions being executable to:

- receive a request to the database classification engine from one of the application programs to access the database;

provide to the requesting application data that includes the information associated with a schema of the database, wherein the information includes classifiers corresponding to columns and tables in the database;

receive one or more requests from the requesting application relating to transferring data between the requesting application and the database;

interrogate a schema object to obtain location information for classifiers in the database that are associated with the one or more requests;

provide the location information of the classifiers to the requesting application;

associate data search constraints from the one or more requests of the requesting application with locations in the database. (emphasis added).

In light of the above remarks and amendments to claims 52, 54, and 56, Applicants respectfully request withdrawal of the rejection.

### **Claim Rejections - 35 U.S.C. § 103**

Claims 1-51 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,012,067 issued to *Sarkar* view of U.S. Patent No. 6,134,540 issued to Carey et al (referred to herein as “*Carey*”).

*Carey* teaches an invention that “enables an object language application (e.g., C++, JAVA, etc.,) to issue a query over a view and to receive back, as query results, handles to application type objects which can be further manipulated by the application.” *Carey*, Abstract.

Regarding claim 1 of the present application, the Examiner states that *Sarkar*, col. 9, ln. 47-49 teaches “constructing the schema object to represent a schema of the database.” *Sarkar* teaches that a relational database has a schema; however, neither *Carey* nor *Sarkar*, alone or in combination, teach or suggest “constructing the schema object to represent a schema of the database” wherein the schema object can be interrogated “to obtain location information for classifiers in the database that are associated with the one or more [application program(s) requests]” (claim 1). Furthermore, *Sarkar* and *Carey*, alone or in combination, fail to teach or suggest an aggregate classifier and “manipulating the database using an aggregate classifier based on the schema object, wherein the aggregate classifier includes multiple classifiers of the database” as recited by claim 1.


Applicants respectfully submit that neither *Sarkar* nor *Carey*, alone or in combination, teach or suggest “defining a plurality of classifier definitions corresponding to the schema of the database and mapping the classifier definitions to columns and tables in the database” (claim 2), “a “property” classifier which interacts with a single column on a single table in the database” (claims 3, 23, and 40), “an “object” classifier which contains one or more of the “property” classifiers” (claims 4, 24, and 41), “a “split-object” classifier which makes more than one “object” classifier appear as a single classifier” (claims 5, 25, and 42), a “join” classifier which identifies how multiple “object” classifiers database objects are linked in a “split-object” classifier” (claims 6, 26, and 43), and “a “mapped property” classifier as a special form of the “split-object” classifier to manage data stored in a table of the database which serves as an index to another database table” (claims 7, 27, and 44). In the sections referenced by the Examiner (i.e. col. 9, ln. 32 through col. 10, ln. 6) *Sarkar* merely describes the schema of a standard relational database that includes URL attributes. Neither *Sarkar* nor *Carey*, alone or in combination, teach or suggest functional characteristics of any database classifier as claimed in the present application.

Applicants also submit that all claims dependent upon independent claims 51, 54, and 56 are allowable for at least the same reasons as the independent claim upon which the dependent claims directly or indirectly depend.

### CONCLUSION

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the examiner is requested to telephone the undersigned.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on May 13, 2004.

 May 13, 2004  
Attorney for Applicant(s) Date of Signature

Respectfully submitted,



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